Computer Science and Computer Engineering (CSCE)

Faculty
David Andrews, Professor, Thomas Mullins Chair of Computer Science and Computer Engineering  
M. Gordon Beavers, Associate Professor  
Christophe Bobda, Associate Professor  
Michael S. Gashler, Assistant Professor  
Susan E. Gauch, Professor, Rodger S. Kline Chair in Computer Science and Computer Engineering  
John Michael Gauch, Professor  
Miaqing Huang, Assistant Professor  
Wing Ning Li, Professor  
Brajendra Nath Panda, Professor  
Pat Parkerson, Associate Professor  
Matthew J. Patitz, Assistant Professor  
Craig Warren Thompson, Professor, Axiom Database Chair in Engineering  
Dale R. Thompson, Associate Professor  
Tingxin Yan, Assistant Professor  

Susan Gauch  
Department Head  
504 J.B. Hunt Center for Academic Excellence  
479-575-6197

Gordon Beavers  
Graduate Coordinator  
508 J.B. Hunt Center for Academic Excellence  
479-575-6197  
E-mail: gordonb@uark.edu

http://www.csce.uark.edu

Degrees Conferred:  
M.S., Ph.D. in Computer Science (CSCE)  
M.S.Cmp.E. in Computer Engineering (CENG)  
M.S.E., Ph.D. in Engineering (ENGR) (See Engineering)

Primary Areas of Faculty Research: Distributed computer systems and networks, cluster computing, database security, molecular computing, computer security, digital forensics, next generation computer architectures, RFID information security, embedded systems, hardware/software codesign, low power systems design, pervasive and mobile computing, intelligent Internet applications, image and video processing.

Prerequisite to Degree Programs: The CSCE Department offers two Master of Science degrees, one in Computer Science and one in Computer Engineering. Applicants to the Computer Science MS program should have a Bachelor of Science degree in computer science from an accredited program. Applicants to the Computer Engineering MS program should have a Bachelor of Science degree in computer engineering from an accredited program. Applicants to either program whose transcripts do not show core courses relevant to the program to which they are applying will be assigned deficiency courses. All applicants must present acceptable scores on the General Test of the Graduate Records Examination (GRE).

Master of Science Degree Programs: The Computer Science and Computer Engineering Department offers two Master of Science programs, one in Computer Science and one in Computer Engineering. The two M.S. degrees have common requirements in terms of the number of credit hours required. The two programs are differentiated by the student’s advisory committee. The advisory committee will approve courses that are appropriate for the student’s program and interests.

Students enrolled in the computer engineering program can expect to take more courses with a hardware and systems emphasis, while students enrolled in the computer science program can expect to take more courses with an emphasis in software and theory. All rules and regulations of the CSCE Department, the College of Engineering, and the Graduate School must be followed.

Degree Requirements: The thesis option (30 hours) requires the successful completion of at least six credit hours of CSCE 610V, Master’s Thesis, plus 24 credit hours of course work approved by the candidate’s advisory committee. At least 15 of the 24 hours must be CSCE courses at the 5000 level. The remaining nine hours may include no more than six hours of transfer work, three hours of individual study, six hours from outside the department, and nine hours of courses at the 4000 level.

All master’s students completing the thesis option must pass an oral examination and defense of the thesis in, at most, two attempts. The first attempt may not occur before all of the following qualifying conditions have been satisfied:

- Candidate has completed at least 21 hours that are applicable toward the degree;
- Candidate is currently enrolled in CSCE 610V;
- Candidate’s cumulative grade-point average on all graduate-level courses is 3.0 or higher;
- Any deficiencies assigned upon admission to the program have been removed; Candidate must be continuously enrolled, except for summers, until the thesis is defended.

The final exam is comprehensive; a portion of the exam will be devoted to questions concerning courses completed by the student. Another portion of the exam will be directed toward a defense of the thesis. Reading copies of the thesis should be delivered to members of the Thesis Committee at least two weeks prior to undertaking the final examination. If a student is unsuccessful, the Program of Study committee may recommend that the examination be repeated. If so, the requirements to be satisfied prior to reexamination will be stipulated and a time limitation specified.

All other conditions that have been specified by the student’s advisory or thesis committee must be satisfied.

The course work option requires the successful completion of 33 credit hours of course work approved by the candidate’s graduate committee. At least 21 of the 33 hours must be CSCE courses at the 5000 level. The remaining twelve hours may include no more than six hours of transfer work, three hours of individual study, six hours from outside the department, and nine hours of courses at the 4000 level.

All master’s students completing the course work option must pass an oral examination of the course work in the final semester of enrollment of graduate-level courses and the following conditions have been satisfied:
1. The candidate’s cumulative grade-point average on all graduate-level courses is 3.0 or higher.
2. Any deficiencies assigned upon admission to the program have been removed.

Students who complete a B.S. degree in CSCE at the University of Arkansas, Fayetteville, with a cumulative GPA of 3.5 or greater may count up to six hours of CSCE graduate-level course work (5000 level) completed as an undergraduate student towards the graduate degree. Students must submit the “Request for Retroactive Graduate Credit” form to the Graduate coordinator in their first semester of graduate study. This form can be downloaded as a PDF at http://grad.uark.edu/forms.student/retro_grad_credit.pdf.

Requirements for the Doctor of Philosophy Degree: In addition to the requirements of the Graduate School, the following departmental requirements must be satisfied by candidates for a Doctor of Philosophy degree with a major in either computer science or computer engineering.

A student is admitted to candidacy by first passing a Ph.D. Qualifying Examination and then, at a later time, a Candidacy Examination on the student’s dissertation proposal. The student must attempt the Ph.D. Qualifying Examination no later than the end of the first year of study for students admitted to the program with a master’s degree and no later than the end of the third year for students admitted to the program without a master’s degree.

The Qualifying Examination is scored Pass or Fail on each of the four sections of the examination. If a Fail is assigned on any section of the examination, then the student must repeat that section at the next administration of the examination. A second failure will terminate the student’s course of study in the doctoral program. In preparation for the Ph.D. Qualifying Examination, a student should refer to the CSCE Graduate Student Handbook.

Each student must form a doctoral advisory committee before registering for dissertation hours. This committee must consist of four faculty members who hold qualifying status on the graduate faculty. Three members, including the chair, must hold regular or adjunct appointments in the Department of Computer Science and Computer Engineering. The fourth member should be from outside the department.

For the Candidacy Examination, the student is expected to present a dissertation proposal. Committee members will judge the proposal on its scientific merit, originality, and difficulty. Each Ph.D. student is required to defend a completed dissertation before his or her dissertation committee.

Summary:

1. All students must complete a minimum of 72 semester hours of graduate-level credit beyond the bachelor’s degree, including a minimum of 42 semester hours of course work and a minimum of 30 semester hours of dissertation research credits.
2. A minimum of 30 semester hours of course work must be at the graduate level (5000 or above)
3. Upon recommendation of the student’s advisory committee, a student who has entered the Ph.D. program after a master’s degree may receive credit for up to 30 semester hours. If the 30 hours includes master’s thesis research, the advisory committee may credit up to six hours of thesis research toward the minimum dissertation research requirement.
4. Ph.D. students must complete a minimum of nine semester credit hours of course work in a set of coherent courses in a related subject area approved by the student’s advisory committee.
5. Students must earn a minimum cumulative grade-point average of 3.0 on all graduate courses attempted.
6. Students must satisfactorily pass both a written and oral qualifying examination.
7. Ph.D. students must complete and defend a dissertation on some topic in the student’s major field of study.
8. Students must satisfactorily pass a final comprehensive oral examination.